

REMARKS

Claims 2, 3, 4, 5, 8, 13 and 14 are amended and claim 15 is added herein. Support is found, for example, in Examples 4, 5, 30 and 31, and the original claims, for instance claim 14. Hence no issues of new matter are presented.

Accordingly, upon entry of the Amendment, claims 1-15 will be all of the claims pending in the application.

I. Request for Initialed PTO 1449

Applicants note that the Examiner has not returned a copy of the initialed and signed PTO-1449 Form, which was submitted on February 21, 2002. Therefore, Applicants respectfully request return of an initialed copy of the above-mentioned PTO 1449 with the next Office communication.

II. Objection to claim 14

On page 2 of the Office Action, claim 14 is objected to as being in improper form under 37 C.F.R. § 1.75(c).

Claim 14 is amended and new claim 15 is added, thereby obviating the objection. Accordingly, withdrawal of the objection is respectfully requested.

III. Rejection of Claims 3, 5, 7 and 10 under 35 U.S.C. § 102(e)

On page 2 of the Office Action, claims 3, 5, 7 and 10 are rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Futamoto et al. (U.S. 6,592,976).

The Examiner cites Futamoto as disclosing a magnetic recording medium having a substrate, a CrTi underlayer, a non-magnetic Co-35at%Cr intermediate layer, a Co alloy

magnetic layer, a NiFe soft magnetic layer and a protective layer thereon (col. 15, lines 28-51; col. 16, Table 4).

IV. Rejection of Claim 6 under 35 U.S.C. § 102(e) or 35 U.S.C. § 103(a)

On page 3 of the Office Action, claim 6 is rejected under 35 U.S.C. § 102(e) as allegedly anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Futamoto.

The Examiner acknowledges that Futamoto does not disclose the amount of extracted Ni from the substrate. However, since Futamoto teaches that a glass substrate is used, it is the Examiner's contention that no Ni would be expected to leak from a glass substrate. In any case, it is the Examiner's position that the structure taught by Futamoto inherently satisfies this claim limitation by virtue of the fact that the reference discloses the same structure as claimed and therefore would be expected to possess the same functional properties.

V. Rejection of claim 4 under 35 U.S.C. § 103(a)

On pages 3-4 of the Office Action, claim 4 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wu et al. (U.S. 6,156,422) in view of Wood et al. (U.S. 5,041,922).

The Examiner cites Wu as disclosing a magnetic recording medium having a substrate, a NiAl layer with a thickness as low as 100Å, a magnetic recording layer and a protective overcoat, and a coercivity greater than 2800 Oe (see abstract; col. 4, lines 30-32 and 43-51). The Examiner acknowledges that Wu does not disclose the presence of a soft magnetic layer on top of the magnetic recording layer. Therefore, the Examiner cites Wood as teaching the use a soft magnetic layer on top of a longitudinal magnetic layer to "capture and provide paths for flux between the magnetic poles of the magnets to protect them against being demagnetized" (see col.

2, lines 49-56). With respect to the thickness of the layer, Wood teaches that it affects the performance of the keeper (col. 3, lines 20-31).

Accordingly, the Examiner takes the position that it would have been obvious to one of ordinary skill in the art to add a soft magnetic layer to provide a flux return path as suggested by Wood, and that it would have been in the purview of one of ordinary skill in the art to choose a suitable thickness for the soft magnetic layer.

VI. Response to the Prior Art Rejections

Applicants respectfully submit that the prior art does not disclose, teach or suggest, taken alone or in combination, the presently claimed invention.

Futamoto relates to a magnetic recording medium having a non-magnetic substrate, a non-magnetic underlayer, a non-magnetic intermediate layer, a magnetic layer, a soft magnetic layer and a protective layer. *See* Example 8. The soft magnetic layer has a thickness of up to 3 nm (30 Å) and the non-magnetic underlayer has a thickness of 30 nm (300 Å). The coercivity of the recording medium appears to be 3.1 kOe (3100 Oe).

Wu relates to a high density recording medium comprising a substrate, an NiAl seedlayer, a CrMn underlayer, a magnetic alloy layer and a protective overcoat layer.

The Examiner cites Wood as teaching the use of a soft magnetic layer on top of a longitudinal magnetic layer to “capture and provide paths for flux between the magnetic poles of the magnets to protect them against being demagnetized” at col. 2, lines 49-56. However, this disclosure states that “keepers are commonly placed over the ends of permanent magnets to capture and provide path for flux between the magnetic poles of the magnets to protect them against being demagnetized.” There does not appear to be any disclosure directed to a magnetic

layer or keeper layer. In addition, the Examiner asserts that with respect to the thickness of the layer, Wood teaches that it affects the performance of the keeper at col. 3, lines 20-31; however, again, there does not appear to be any mention of hard magnetic or soft magnetic layers in this section of the disclosure.

However, at col. 6, lines 25-29, Wood relates to a magnetic recording medium comprising a substrate, a magnetic layer and a soft layer (soft magnetic layer), that effects the transfer of magnetic signal flux between the magnetic transducer and the high coercivity magnetic layer. In addition, Wood discloses that the keeper layer has a thickness of about 300 to 1000 Å.

Claim 3 is amended herein to recite that Pt and Ta are present in the non-magnetic intermediate layer of the claimed magnetic recording medium, thereby further distinguishing the claimed invention from Futamoto. Support for the amendment is found, for example in Examples 30 and 31 of the present specification. Therefore, Futamoto does not disclose all elements as recited in claim 3, as amended.

Claim 5 is amended to recite that Mo, W, V, Ti and Nb are present in an amount of 30 at % or less based on page 7, lines 15-24 of the present specification. Therefore, Futamoto does not disclose all elements as recited in claim 5, as amended.

Claim 4 is amended herein to recite that the thickness of the soft magnetic layer is about 5 to 40 Å, based on a comparison of the examples in the present specification having a thickness of 40 Å with examples having 60 Å. For example, Test Example 4 having a soft magnetic layer thickness of 40 Å has an SNR of 21.5, which is unexpectedly superior when compared with the SNR of 16.6 of Test Example 5, which has a soft magnetic layer thickness of 60 Å, which is

outside the scope of the present invention, but is closer to the present invention than the closest exemplified thickness in Wood. Therefore, the presently claimed invention provides unexpectedly superior results over the prior art and one of ordinary skill in the art would not have had a reasonable expectation of achieving the claimed invention even if Wu and Wood were combined.

Claims 6, 7 and 10 are distinguishable over the prior art for at least the same reasons as claims 1, 2, 3, 4 and 5. Thus, Applicants respectfully request withdrawal of the rejections.

VII. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

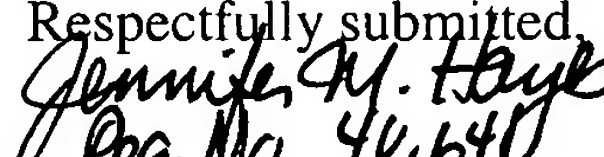

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CUSTOMER NUMBER

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Respectfully submitted,

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